



BG POUCH SYSTEM ITEM SORTATION AND SEQUENCING



LESS TOUCH, LOW COST MULTI-USE SORTATION

To handle rising demand from e-commerce, fulfilment centres and distribution centres are using overhead pouch sortation to achieve omni-channel fulfillment and increased operational flexibility.

Using a BG Pouch System installed in unused overhead space, single items can be buffered, sorted and sequenced to automate the order handling and returns processes with a capacity of 10,000 items/hour per sortation module. The combination of benefits enables the logistics operators to achieve handling with very few manual item touches, a higher throughput and very little use of floor-space.

As a simplified logistics process, pouch sortation increases efficiency by reducing the number of times that each item is touched in the fulfilment or distribution centre. For returns handling, the need for less handling or touching is particularly critical.

The fulfilment or distribution centre can streamline a number of handling processes

by using the BG Pouch System; regular sorting after picking, batch sortation and intermediate storage handling of returned items. The common denominator is flexible automation with automatic loading and unloading, which enables each of these logistics processes to be completed with minimum manual handling and offers the possibility of zero-touch. In addition to

increased handling efficiency, the operational cost is reduced for sortation and returns handling.

To ease the handling of items in the returns process each returned item is placed directly into a pouch rather than into regular storage. The pouch system is used as an intermediate buffer for items which are most likely to be re-sold according to data from the Warehouse



Management System (WMS). Items which are not sold after a few days can be returned easily to shelf storage as part of an automatic housekeeping process which is run during low throughput periods.

Handling peaks can be flattened by using the pouch system for predictive picking of items before the days of peak demand. In

this process, items which are pre-picked before a promotion or sale can be buffered individually in pouches inside the system. The moment the WMS registers a sale, the relevant items are moved from the buffer and immediately sorted for packing.

HIGHLIGHTS

- › Simplified process reduces touches per item for order fulfillment and returns handling
- › Single multi-purpose system for buffering, sorting and sequencing
- › WMS integration optimises supply chain from warehouse to B2C and B2B recipients
- › 7 kg pouch capacity. Handles wide item mix including Garments on Hangers (GOH)
- › Garments on Hangers (GOH) up to 3.5 kg.
- › Scalable system provides throughput of 10,000 pouches per hour per sortation module.
- › Improved throughput per station with automatic pouch loading
- › Gentle product handling with BEUMER AutoDrop automatic pouch unloading
- › Innovative BEUMER AutoDrop capability with less mechatronics and reduced unloading area footprint
- › Integrates with the BEUMER Warehouse Control System (WCS)

EXTENDED ITEM HANDLING CAPABILITIES



From random to perfect order in three steps

Each standard BG Pouch System module can be configured to provide minimal touch for order fulfillment and returns handling within a single system. The BEUMER AutoDrop functionality further enhances this by automating the unloading process, ensuring gentle product handling and reducing the number of touches even further.

The BG Pouch System provides a dynamic buffer that works as a scalable interim storage. The dynamic buffer can also be used as support for the picking systems to reduce handling peaks.

SORTING FOR SEQUENCED PACKING

Sorting items in specific sequences saves time for packing and shipping orders for specific customers or shops. The order in which items are packed and shipped can be determined by the WMS according to the recipient's requirements. The order can also be packed in the sequence that allows shop staff to unpack the items in the order that matches the design of the shop shelving.

AUTOMATIC UNLOADING WITH AUTODROP

The AutoDrop function is made possible by use of shape memory alloy technology. A shape memory actuator activates when the pouch reaches the intended unloading position. The automatic opening mechanism consists of two engaged rail units. The activation separates the two rail units from each other, and the item then drops out of the pouch and into the awaiting packaging.

With AutoDrop it is possible to skip the matrix sortation module, if a perfect sortation order is not needed, making the overall process leaner. Alternatively the matrix sortation module can be used, to ensure a perfect sortation for shop orders.



Sequence two



Final sequence

STREAMLINED RETURNS

The returns process can be significantly simplified by using the dynamic buffer to handle returned items. The process eliminates the need for each item to go back into storage to be re-picked and transferred to shipping.

After being checked and labelled, the returned item is placed directly into a pouch. The pouch system, becomes interim storage so that any single item can be released immediately for order fulfillment.

The processed items and data are controlled and optimised with the seamless integration of the Warehouse Management System (WMS), the BEUMER Warehouse Control System (BEUMER WCS), and the PLC system of the BG Pouch System.

Flexibility is the key which enables logistics operators to use a BG Pouch System to handle a wide range of items. Each pouch has the capacity to hold an item which weighs up

to 7 kg and can physically fit into the pouch. BEUMER AutoDrop functionality also enables multiple adjustable drop point positions to be placed in one drop line, further enhancing the systems flexibility.

BG Pouch system is capable of delivering a system capacity of 10,000 pouches/hour, delivering an estimated 25% higher throughput per module compared to traditional pouch sorting solutions.

In a typical installation this would mean up to a 30% saving in floor space.

In fulfilment or distributions centres, the integration with other automated material handling systems, combined with the modularity of the pouch system, enables the level of automation to be adjusted to match individual requirements. The modularity of the pouch system allows it to be simply scaled in capacity by adding one or more modules with very low additional investment. The benefit is that the system can grow in parallel to match the growth of the business.

APPLICATIONS

- > Fashion
- > Pharma & Beauty
- > Print & Media
- > Electrics & Electronics
- > Small Parcels Courier & Express Services

ERGONOMICS FOR HIGH PRODUCTIVITY



High focus on the ergonomics for the operators

To support higher productivity and simplify work processes, the BG Pouch System is based on a strong ergonomic design.

The ability of the BG Pouch System to buffer, sort and sequence provides the operational flexibility to move operators to work on different processes. The staff will benefit by working across a more varied range of tasks and the logistics operators can optimise the

use of staff.

This level of flexibility could allow items for peaks to be picked in the morning for packing in the afternoon or during periods of low demand.

The workstations are designed to provide maximum comfort and accessibility with focus on an ergonomic solution. The pouches are also designed for easy opening and the workstation provides the optimum setting for

the operator to fill or empty the pouches.

To ensure fast installation and minimise maintenance, the overhead BG Pouch System combines simplicity with a lean and modular build and is designed to use the height of the building.

Fast installation is supported by the pre-assembly of the mechanical modules

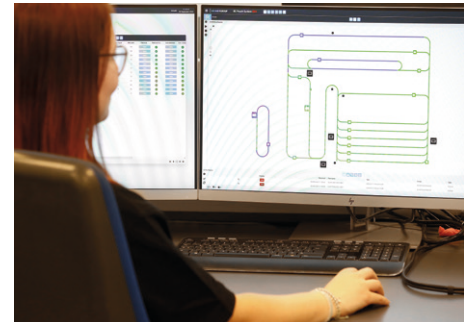
SPECIFICATIONS

- › Sortation capacity per module: System performance of 10,000 pouches per hour includes Garments on Hangers (GoH)
- › Loading station capacity: Automatic Loading Station: 1,600 pouches per hour
- › Product dimensions (mm): Max. 530 (L) x 430 (W) x 250 (H) (Applies to BEUMER AutoDrop only)
- › Magnetic drive technology
- › RFID technology for carrier identification
- › 80° vertical incline and anti-gravity descent
- › PLC controls with mobile panels for fast maintenance and troubleshooting

LEAN INSTALLATION AND LOW MAINTENANCE



Gentle handling and complete system overview – also in when moving between heights



before the system is delivered onto the site for installation. The PLC system is equally modular and require minimal on-site configuration. Emulation of the full system ensures that all processes are tested before delivery and installation.

The use of the same components throughout the pouch system supports fast assembly and also reduces the cost of maintenance once the system is in operation.

The innovative contactless magnetic drive delivers a number of operational advantages that help to lower maintenance requirements and increase the lifetime of the system. The magnetic drive also controls the line pressure to give smooth and gentle handling of products. To minimise maintenance, the magnetic conveyors produce no friction and no dust which could compromise the sensors.

The use of electricity rather than compressed

air enables the contactless carrier drive to provide a high and very accurate performance in addition to eliminating the need for expensive pneumatic installations.

A low level of maintenance is part of the system design which means that fewer parts need to be held in the already simple spare parts inventory.

BEUMER AUTODROP SUMMARY

- › Innovative opening mechanism: robust and simple with high availability
- › Less mechatronics needed: reduces conveying elements and number of unloading stations
- › Reduced footprint: significant reduction in unloading area footprint
- › Less labor required: higher levels of automation with less manual touches
- › Reduced order lead time: less transport time to unloading station
- › Product gentle handling: short distance between drop point and chute
- › Adjustable drop point positions: flexibility for different unloading needs
- › Multiple drop point positions in one drop line: further reduces footprint, enhances flexibility

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